

Chapter 5: Maintaining Balance in Organisms

How Do They Stay So Cool?

Process and Procedures

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3. Fill in the table.

Type of animal	Behavioral responses to changes in temperature
Gila monster	
Horned lizard	
Dog	
Hippopotamus	
Bear	
Human	

4. What similarities and differences do you see between the behaviors that lizards and humans use to help regulate temperature?

5. What similarities and differences do you see between the way the other animals you observed and humans regulate temperature?

How Do They Stay So Cool?

Behavior and Homeostasis

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Homeostasis	is maintained by processes in the body
Regulating temperature	<p>two ways:</p> <ol style="list-style-type: none"> 1. generating heat internally 2. depend on external environment

Endotherm

animal that regulates its temperature by creating heat internally

Endo = inside

Therm = temperature



Birds and mammal are endotherms

Ectotherm

animal that depends on the external environment to regulate its temperature

Ecto = outside of

Amphibians, reptiles and most fish are ectotherms

Endotherms	maintain constant temperature by balancing heat production with heat loss  internal process
Heat production	<ul style="list-style-type: none"> •eating •exercising •shivering
Heat loss	<ul style="list-style-type: none"> •sweating •breathing fast •transfer heat to environment
Ectotherms	do not have an internal process to regulate their body temperatures  behavioral responses Example: lizards move in and out of sunshine/adjust angle to the sun
Animal adaptations for regulating salt	<ul style="list-style-type: none"> •marine reptiles (sea turtles) have special glands above their eyes that excrete excess salt •in some birds, excess salt drains out of their beaks •human kidneys remove excess salt and excrete it in urine
Human behaviors	<ul style="list-style-type: none"> •cool or heat external environment

- sports drinks to restore electrolytes after sweating
- access to a variety of foods, beverages and drugs that can restore or destroy homeostatic balance